NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE STANDARD

BRUSH MANAGEMENT (ACRE)

CODE 314

DEFINITION

Removal, reduction, or manipulation of non-herbaceous plants.

PURPOSES

- Restore natural plant community balance.
- Create the desired plant community **in accordance with resource needs and landowner objectives**.
- Restore desired vegetative cover to protect soils, control erosion, reduce sediment, improve water quality and enhance stream flow.
- Maintain or enhance wildlife habitat including that associated with threatened and endangered species.
- Improve forage accessibility, quality and quantity for livestock.
- Protect life and property from wildfire hazards.

CONDITIONS WHERE THIS PRACTICE APPLIES

On rangeland, native or naturalized pasture, pasture and hay lands where removal or reduction of excessive woody (non-herbaceous) plants is desired.

Where adjustments in grazing management alone will not restore the kind of plant cover or species needed to attain conservation objectives within a reasonable time.

Where control of woody species is necessary to allocate soil moisture to herbaceous plant species, or to conserve soil moisture.

Where a reduction of brush is necessary to ensure the safety of life and property in areas of high wildfire hazard.

Where the present canopy cover of conifers (13-feet tall or taller) is less than 25% to remove unwanted or encroaching trees. NOTE: In areas where the present canopy cover of conifers (13-feet tall or taller) is 25% or greater, use practice code 666 – Forest Stand Improvement. Practice code 666 may also be used on rangelands where present canopy cover is less than 25% if the producer has a forest management objective for that area.

CRITERIA

General Criteria Applicable to All Purposes

Brush management will be designed to achieve the desired plant community in woody plant density, canopy cover or height.

Brush Management will be applied in a manner to achieve the desired control of the target woody species and protection of desired species. This will be accomplished by mechanical, chemical, biological, prescribed burning or a combination of these methods.

Prescribed grazing **will** be applied to ensure desired response from treatments.

NRCS, MT
November 2005

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard contact the Natural Resources Conservation Service.

NOTE: This type of font (AaBbCcDdEe 123..**)** indicates NRCS National Standards.
This type of font (AaBbCcDdEe 123..) indicates Montana Supplement.

Brush, as used in this standard, includes woody half-shrubs, shrubs, and trees that invade areas on which they are not part of the historic climax plant community, or that occur in amounts significantly in excess of that in the historic climax plant community for the ecological site. Refer to FOTG, Section II, Ecological Site Descriptions.

The type of treatment selected will depend on the following factors: kind of land, ecological site, topography, species of woody plants - whether they are root sprouters or non-sprouters, and the size, abundance, and distribution of woody plants. Potential hazards of treatment, wildlife habitat needs, impacts to recreation and aesthetics, objectives of the land user, and costs in relation to expected benefits will also be considered.

Mechanical operations and prescribed burning will be timed to prevent exposure of bare soil for prolonged periods to reduce erosion and potential sedimentation to waterways.

Brush management is not recommended on shallow and/or steep soils or on sites where brush removal will result in accelerated erosion.

Sufficient woody vegetation and cover will be retained in riparian areas to provide for shading, bank stability, and detritus.

Additional Criteria for Improving Wildlife Habitat

Brush Management will be planned and applied in a manner to meet the habitat requirements of the wildlife species of concern. **Refer to guidelines in the FOTG, Section IV–Practice Standards and Specifications, 644–Wetland Wildlife Habitat Management and 645–Upland Wildlife Habitat Management.**

Brush Management will be planned in a manner that it will not adversely affect threatened or endangered species or their habitats.

Leave a 10 to 15 percent canopy cover of existing brush species within the treated area, either as a block or a mosaic of treated and untreated areas, to decrease the potential of any negative impacts to wildlife associated with this practice.

Additional Criteria For Reducing Wildfire Hazards

Control undesirable woody plants in a manner that creates the desired plant community which reduces wildfire hazard conditions.

Control the density of volatile woody plants and promote the growth of more fire resistant herbaceous species to protect structures and land from wildfire hazard conditions. Refer to guidelines in the FOTG, Section IV–Practice Standards and Specifications, 394–Firebreak for design criteria.

CONSIDERATIONS

Consider the potential for natural regeneration prior to conducting any brush management method.

Timing and sequence of brush management in a pasture and/or the entire operating unit should be planned in coordination **with a** grazing management plan.

Consider soil erosion potential and difficulty of vegetation establishment when choosing a method of control that causes soil disturbance.

Brush management objectives and procedures may be different for different kinds of land and for different uses of the land. For example:

- **If primary use of rangeland is for domestic livestock, the objectives may be to manipulate numbers, species, and distribution of brush to approximate that of natural or climax conditions for the site. If use is also for wildlife, an additional objective may be to maintain more brush than is natural to the site and to manage the brush in a pattern on the land that favors both livestock and wildlife.**

Additional Considerations Applicable for Improving Wildlife Habitat

Brush on land where wildlife is a primary or important use should be manipulated to provide optimum wildlife habitat and to facilitate wildlife management.

Where the landscape provides opportunity, consider leaving brush on steep escarpments, ravines, rocky hillsides, and other rough formations.

Tree-lined drainage ways provide thermal cover and other habitat components. However, if the woody cover is excessive for the site, or is not native to the site, the adverse impact to hydrology may offset the wildlife benefit.

When brush is being managed to improve rangeland, consider leaving selected areas of desirable food and cover plants for wildlife. The type of cover and size of the areas to be retained depends on the type of wildlife being benefited. Scattered areas as small as 1/4 acre can be beneficial to most species of upland wildlife.

Where wildlife is to be the primary user of the habitat, manage brush to provide travel lanes, escape cover, loafing areas, and browse plants. The following are examples:

- **On areas of uniform slopes, leave strips or clumps of brush to provide food and cover.**
- **Where they occur in brush areas, leave fruit and mast trees to produce food for wildlife.**
- **In mixed brush, less desirable species may be controlled to promote the development of the more important plant species, which contribute to wildlife food and cover.**

PLANS AND SPECIFICATIONS

Plans and specifications for the treatment option selected by the decision maker will be prepared for each pasture, field, or management unit where Brush Management will be applied.

Plans and specifications will be based on the practice standard and may include narratives, maps, drawings, job sheets, or similar documents. These documents will contain the following data as a minimum:

Brush canopy and/or species count, transect line locations and percent canopy and/or species numbers per acre of the target plant(s)**, species controlled and species benefited, erosion protection needed and provided during improvement/recovery period.**

As needed, maps or drawings showing areas to be treated and areas to be left undisturbed should be prepared.

For mechanical treatment methods, plans and specifications will include types of equipment and any modifications necessary to enable the equipment to adequately complete the job. Also included should be:

- Dates of treatment
- Operating instructions
- Techniques or procedures to be followed

For chemical treatment methods, plans and specifications will include:

- Herbicide name
- Rate of application or spray volumes
- Acceptable dates of application
- Mixing instructions (if applicable)
- Any special application techniques, timing considerations or other factors that must be considered to ensure the safest, most effective application of the herbicide
- Reference to label instructions
- Documentation of the use of environmental risk analysis tools (such as WIN-PST Soil Pesticide Interaction Loss Potential and Hazard Rating Report) in formulating alternatives with the client.

Refer to guidelines in FOTG, Section IV–Practice Standards and Specifications, 595–Pest Management for specifications.

For biological treatment methods, plans and specifications will include:

- Kind of biological agent or grazing animal to be used
- Timing, duration and intensity of grazing or browsing
- Desired degree of grazing or browsing use for effective control of target species
- Maximum allowable degree of use on desirable non-target species
- Special precautions or requirements when using insects or plants as control agents

For Prescribed Burning treatment**, refer to** guidelines in FOTG, Section IV–Practice Standards and Specifications, Prescribed Burning **(338)** for specifications.

OPERATION AND MAINTENANCE

Operation: Brush Management practices shall be applied using approved materials and procedures. Operations will comply with all local, state, and federal laws and ordinances.

Success of the practice shall be determined by evaluating regrowth or reoccurrence of target species after sufficient time has passed to monitor the situation and gather reliable data. Evaluation periods will depend on the methods and materials used.

Maintenance: Following initial application, some regrowth, resprouting, or reoccurrence of brush should be expected. Spot treatment of individual plants or areas needing retreatment should be done as needed. **The manager will implement prescribed grazing management that will ensure longevity of the practice.**

REFERENCES

Montana, Wyoming, Utah–Weed Management Handbook, 2001–2002, Cooperative Extension Services, April 2001.

Range Developments and Improvements, Vallentine, Brigham Young University Press, 1977.

Saltcedar (Tamarisk), Grubb, R.T., R.L. Sheley, and R.D. Carlstrom, MONTGUIDE MT 9710, 1997.

USDA–Natural Resources Conservation Service, Field Office Technical Guide, Section IV–
Practice Standards and Specifications:

338–Prescribed Burning, *most current dated version.*

528–Prescribed Grazing, *most current dated version.*

550–Range Planting, *most current dated version.*

595–Pest Management, *most current dated version.*

644–Wetland Wildlife Habitat Management, *most current dated version.*

645–Upland Wildlife Habitat Management, *most current dated version.*

Montana Final Sage Grouse Management Plan, 2005.